7. A hub for a high speed flywheel system, comprising:

a flywheel hub having radial splines;

a flywheel rim liner having radial projections mating with said splines to form a torque transmitting coupling between said hub and said liner that maintains concentricity between said hub and said rim liner;

A2

said flywheel rim liner made of a material having a strain-to-failure capability and a ratio R_l equal to E_l/ρ_l, wherein E_l is a hoop modulus of elasticity of said rim liner and ρ_l is the density of said rim liner material;

said rim liner strain-to-failure capability and ratio R_l being such that said rim liner remains in compressive contact with said rim from start to maximum speed of said flywheel system.

10. A process of coupling a flywheel rim to a flywheel hub, comprising:

mounting said rim on a rim liner; and

A3

coupling said rim liner to said hub with a torque coupling that allows said liner to grow radially with respect to said hub while remaining concentric thereto during high speed operation.

16. A flywheel system as defined in claim 15, wherein:

A4

said coupling includes an array of radial projections spaced angularly around said liner extending into radial grooves in said hub.